

REMARKS

Claim 1 has been amended to incorporate therein the recitation of claims 2 to 4. Claims 2 to 4 have been canceled. Claim 5 has been amended to depend from claim 1. Claims 7 and 9 were amended to correct punctuation errors.

Entry of the amendment and review and reconsideration on the merits are respectfully requested.

Claims 1-6, 8 and 10-15 were rejected under 35 U.S.C. § 102(e) as being anticipated by U.S. Patent 6,776,195 to Blasko et al. Claims 7 and 9 were also rejected under 35 U.S.C. § 103(a) as being unpatentable over Blasko et al.

Applicants traverse, and respectfully request the Examiner to reconsider in view of the amendment to the claims and the following remarks.

The present invention relates to a laminated resin molding comprising a thermoplastic polymer layer(A) comprising a thermoplastic elastomer, a polyamide-based resin layer (B) and a thermoplastic resin layer (C) comprising a fluorine-containing ethylenic polymer.

In addition, the polyamide-based resin has an amine value of 10 to 60 (equivalents/ 10^6 g) and the thermoplastic resin layer contains a carbonyl group.

Therefore, the polyamide-based resin layer and the thermoplastic resin layer are firmly adhered to one another.

Polyamide resins in wide use generally have an amine value of lower than 10 (equivalents/ 10^6 g). When the polyamide-based resin has an amine value of lower than 10 (equivalents/ 10^6 g), coextrusion is necessarily carried out with the fluororesin at a high temperature of at least 260°C to attain a sufficient level of interlaminar adhesive strength between the polyamide based resin layer and fluororesin layer. At such a high temperature,

however, the thermoplastic elastomer gives rise to problems in the molding step, for example foaming. Consequently, a problem of the prior art is that the polyamide resin and fluororesin cannot be co-extruded. See page 3, lines 1734, and Examples 12, 14 and 16 of the specification.

Hitherto, no technology has been available of coextruding a thermoplastic elastomer, a polyamide resin and a fluorine-containing ethylenic polymer to produce a laminate having sufficient adhesive strength among these material layers. See page 4, lines 21-26 of the specification.

In the present invention, the polyamide-based resin has an amine value of 10 to 60 (equivalents/ 10^6 g). When the amine value of the polyamide-based resin is selected within the above range, the interlaminar adhesive strength between polyamide-based resin layer (B) and thermoplastic resin layer (C) can be increased even in the case of using, for example, a thermoplastic elastomer as the thermoplastic polymer and carrying out coextrusion at a relatively low temperature such that the thermoplastic elastomer will not foam. See page 13, lines 14-23 of the specification.

Criticality in the claimed amine value range of 10 to 60 (equivalents/ 10^6 g) of the polyamide-based resin is demonstrated by comparing the results for Experiment Example 7 (polyamide-based resin PA-D Nylon 11 having an amine value of 32 equivalents/ 10^6 g) with those of Experiment Example 13 (polyamide-based resin PA-C, Nylon 11 having an amine value of 8.4 equivalents/ 10^6 g). See Table 1 at page 57 and Table 3 at pages 64-65 of the specification. As discussed at page 66, lines 1-15 of the specification, the tubes of Experiment Examples 1 to 11 (amine values ranging from 24 to 32 equivalents/ 10^6 g) were all satisfactory in tube inside and outside surface appearance and in initial interlaminar adhesive strength. Even when the intermediate layer-forming polyamide-based resin was a plasticizer-containing resin, the

appearance and initial adhesive strength were good. On the contrary, the tubes of Experiment Example 13 (amine value of 8.4 equivalents/10⁶ g) and Experiment Example 15 (amine value of 6.8 equivalents/10⁶ g), in which the polyamide-based resins used were low in amine value..., were inferior in initial intermediate layer/inner layer adhesive strength. Test data taken from the present specification for Experiment Examples 7 and 13 (which are directly comparable), is reproduced below.

	Outer Layer Thermoplastic Polymer	Intermediate Layer Resin	Inner Layer Resin	Amine Value of Polyamide-Based Resin (equivalents/10 ⁶ g)	Intermediate Layer/Inner Layer Adhesive Strength (N/cm)
Experiment Example 7	TPU-1	PA-D	F-B	32	46
Experiment Example 13	TPU-1	PA-C	F-B	8.4	8

The test data presented in the specification establishes that the claimed range for the amine value achieves unexpected results relative to the prior art, and that the claimed range is therefore critical to achieving the effects of the invention.

In contrast, Blasko et al. is silent with respect to amine value. Although Blasko discloses Nylon 6 and the like, it is well known that polyamides have the different amine values and acid values even when having the same nylon number.

Moreover, Blasko et al. is also silent as to the relationship between amine value and adhesive strength.

Furthermore, Blasko et al. does not disclose that the inner fluoropolymer layer, the outer nylon layer and the elastomer are co-extruded simultaneously.

Moreover, there is no apparent reason which would lead of ordinary skill in the art to use an outer nylon layer having the amine value of not less than 10 (equivalents/10⁶ g), precisely because such amine value is not generally used.

In view of the amendment to the claims, the test data presented in the specification and the foregoing remarks, it is respectfully submitted that the present claims are patentable over Blasko et al., and withdrawal of the foregoing rejections is respectfully requested.

Withdrawal of all rejections and allowance of claims 1 and 5-15 is earnestly solicited.

In the event that the Examiner believes that it may be helpful to advance the prosecution of this application, the Examiner is invited to contact the undersigned at the local Washington, D.C. telephone number indicated below.

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Respectfully submitted,



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